Accelerator Systems Division Highlights Ending August 5, 2005

Installation

Craft Snapshot 7/26/05

ASD productive craft workers	48.0
Foremen (Pd by 15% OH)	6.0
HSM management (Pd directly)	3.0
TOTAL AMSI WORKERS	57.0
Less WBS 1.9, 1.2 etc	12.0
Less absent	2.0
TOTAL PD BY ASD/ORNL DB WPs	34.0

Accelerator Physics

- One microcrystalline and one nanocrystalline diamond foil have arrived safely at LANSCE. The nanocrystalline foil is scheduled to be installed into the Proton Storage Ring on August 22, where it will be subsequently tested. We are also in contact with vendors and other labs about fabricating stripper foils for our ring commissioning run starting in January.
- The temporary target view screen design review was held on 26/Jul. Overall the design is very solid. Detailed drawings are now in progress and parts fabrication will start soon. We are pursuing one new idea -- to use a short rad-hard fiber optic bundle just in the highest radiation area. The rest of the 30 foot length of fiber would be semi-rad hard fiber

Operations

- Re-established the beam through the Front End, DTL and CCL modules 1-3
- Transported the 157 MeV beam to the LINAC Beam Dump
- Commissioned the CCL Module 4
- Commissioned the first few SCL Cavities

Ion Source

- The Front-end ion source is delivering beam as requested. Monitoring the reflected 13 MHz power has replaced the visual observation of the plasma. A temporary increase of the 13 MHz power and/or the H2 puff-level is occasionally needed to start the plasma. These were the only times operations requested assistance.
- A normalized rms emittance of 0.13 Pi-mm-mrad has been measured with a 10 mA H- beam extracted on the test stand from an uncesiated source with a two-temperature collar. It will be interesting to compare this with emittances measured after cesiation.

Survey and Alignment

Mechanical

Magnets

- We have another 21Q assembly ready to go to the RTBT. That leaves one more assembly to put together.
- We are measuring the 2nd 30Q Quadrupole.
- We are configuring the 41CDM30 for maximum steering for the Ring Injection Dump.

Water Systems Installation

- The Ring SB Power Supply cooling system was made operational.
- Installation of the main Ring dipole buss cooling lines in the RSB continued.
- Fabrication of the RTBT/Target Quad cooling manifold was started.
- Preventative Maintenance on the Linac water systems continued.

Ring Systems Installation

- The Ring collimator straight section midsection solenoid support stand was installed.
- The Ring collimator straight solenoid was installed on the stand and adjustments to both are in process.
- The Ring collimator straight section beamline general vacuum installation continued.
- The RTBT/Target Duratek shielding block removal was completed.
- The RTBT/Target access pit was cleaned and painted to minimize future contamination in that area.
- The RTBT/Target pit #1 bottom plates were removed and the concrete floor lintels reinstalled.
- The RTBT/Target quad magnets' assembly/test stand was assembled and mounted to the floor.
- The RTBT/Target flight tube was realigned and cleaned.
- A pre-installation coordination meeting was conducted for the RTBT/Target Quad utility installation.

Electrical
- Completed all Linac/HEBT Installation activities

HPRF
Ring RF
- Some preliminary work on the Ring RF AC power substation has been completed with the remaining testing scheduled for the week of August 8.
- We were able to complete some preliminary interlock/control testing with an independent DC control voltage power supply.

LLRF

Cryo Systems

Controls
- Vacuum control panel assemblies for Ring PLC #1 were finished by the "rack factory" and should be received by next week. (Panel assemblies for Ring PLC #2 and RTBT are in progress).
- EMI/RFI racks were received for the LEBT Chopper system and are now being set up.
- Device Support software has been developed for the Keithley 6517A Electrometer. This software will be used to implement a Linear Ion Chamber.
- Problems with calibrating target cooling loop valves were traced to piston O-rings which were 30% too small in the minor diameter. These O-rings must be made of radiation-resistant material, so must be specially ordered. Replacements should be shipped in 2-3 weeks. In the meantime, ordinary O-rings of the correct size were obtained to replace the existing piston O-rings in all valves used in the target cooling loops so that system testing can proceed.
- The Controls Group provided support for SCL commissioning this week, including resolving a variety of MPS and vacuum issues.

Beam Diagnostics
BPMs
BCMs
BLMs
Foil video